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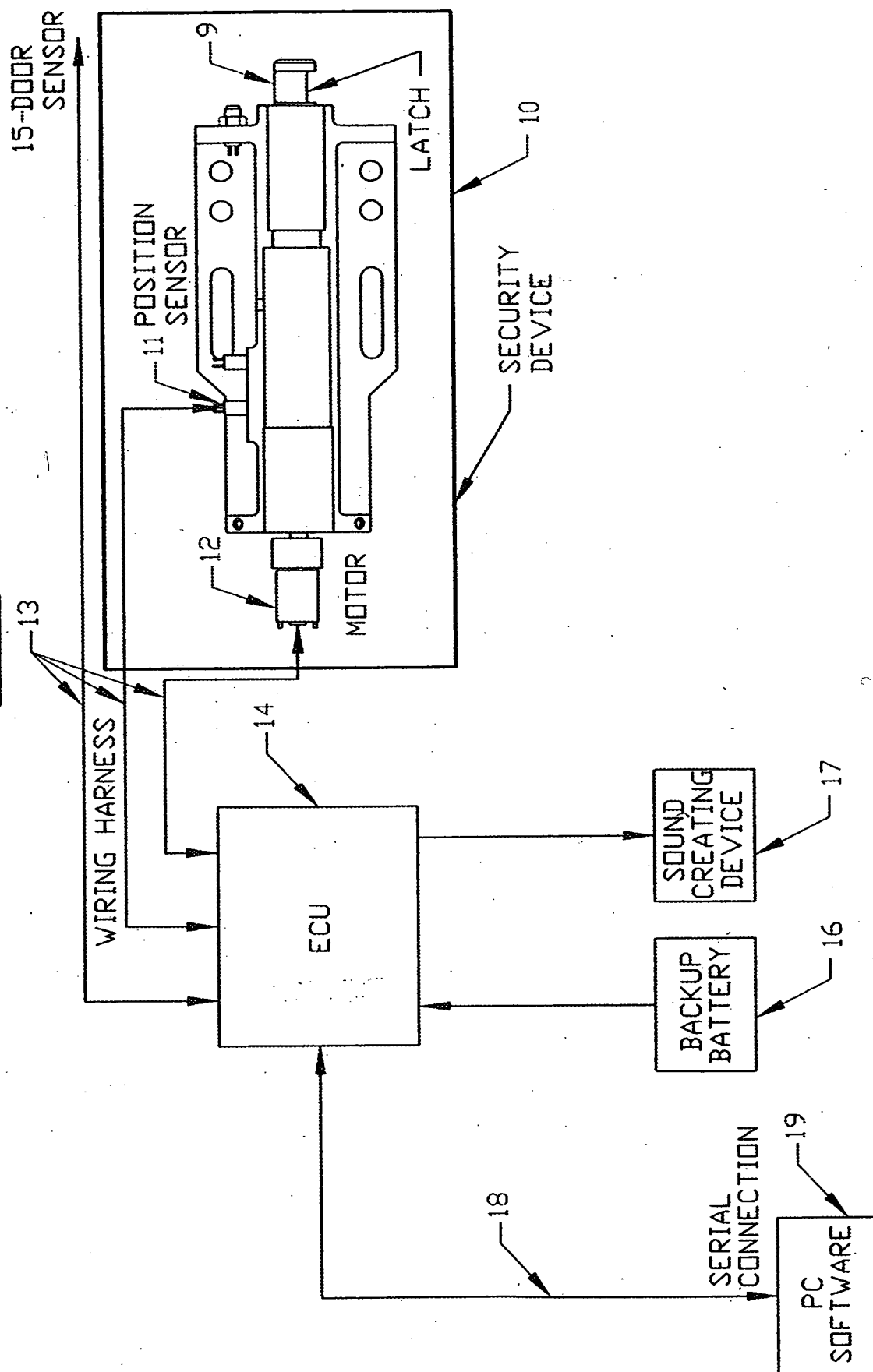
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FIG 1



Electronic Control Unit

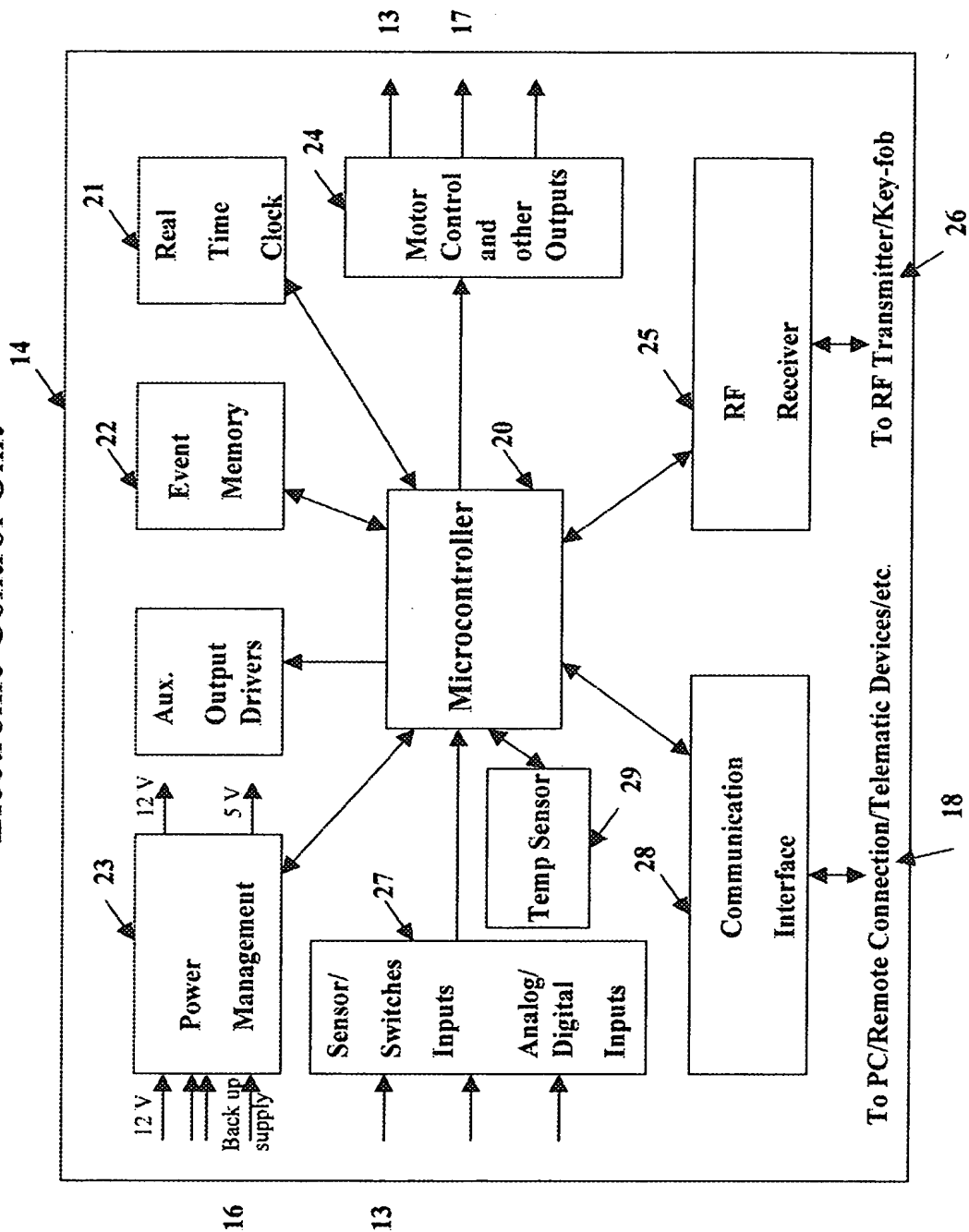


FIG. 2

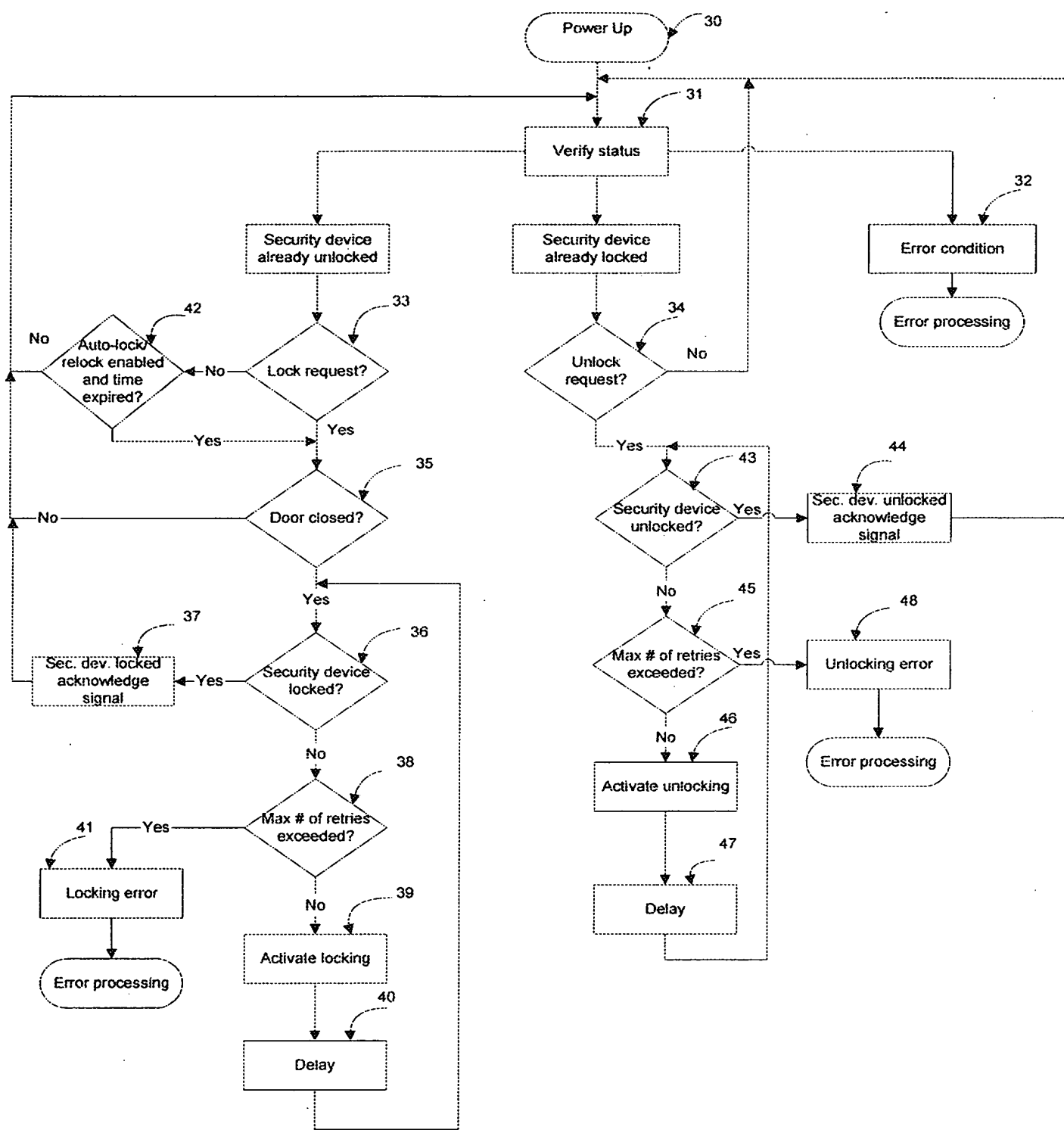
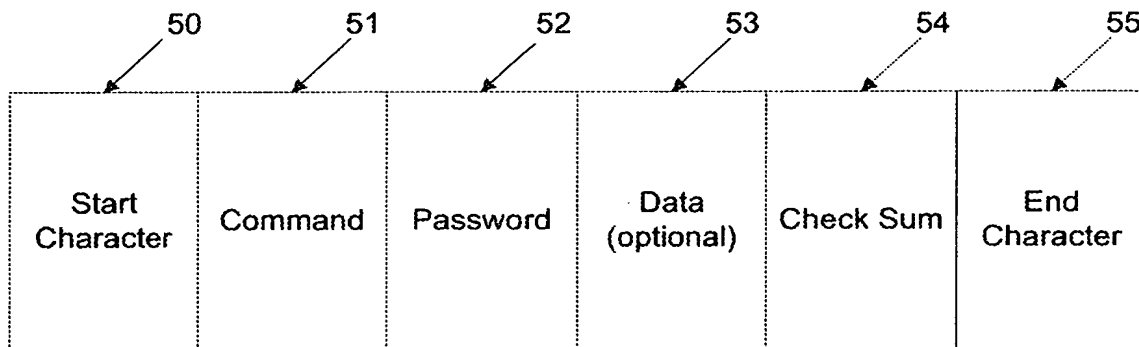
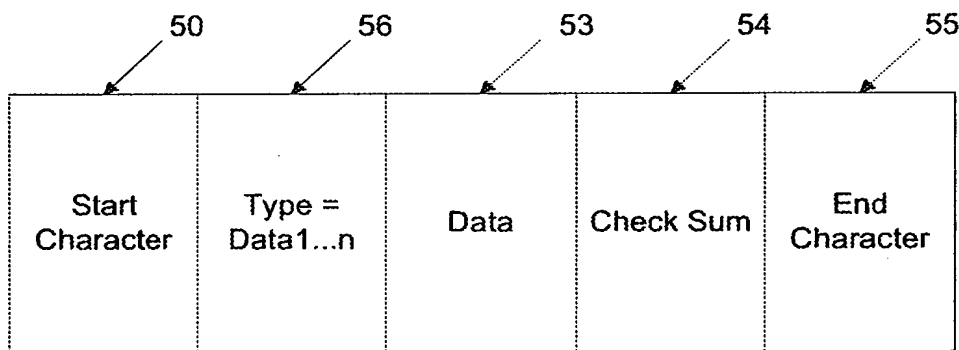


Fig. 3

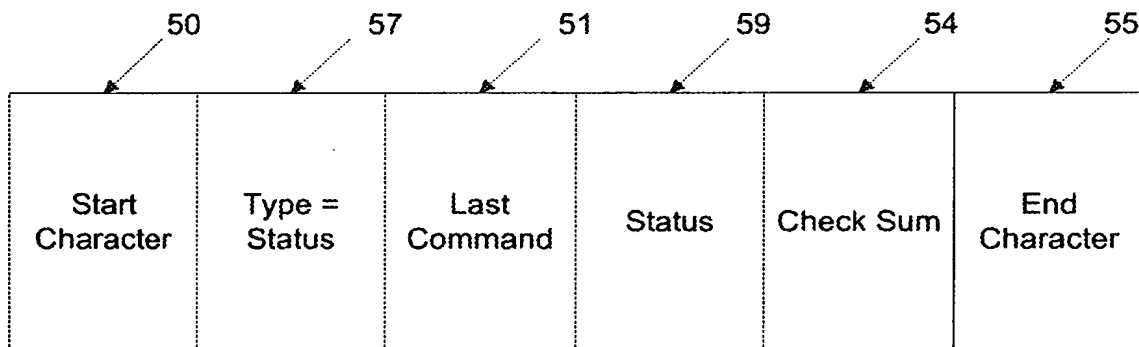
Fig. 4 Communication Protocol



60 → **Command Packet from a PC**



61 → **Data Packet**



62 → **Status Packet**

71 72 73 74

70

File Lock Data Help

POWER-IN-LOCK
CANADA / ANTI-THEFT PROTECTION

BY
POWER-IN-LOCK
Master Systems & Technologies, LLC

Initialize Power In-Lock

LED ☒ ☐

Temp. °C Main VDC Aux VDC

Relock Time Sec. Autolocking Time Sec.

Configuration

- ☒ Power Management Enabled
- ☒ Automatic Relocking Enabled
- ☒ Automatic Locking Enabled
- ☒ Hardwire Control Enabled
- ☒ RF Key Fob Control Enabled
- ☒ Aux Battery Recharging Enabled

- ☒ Buzzer Enabled
- ☒ Unrestricted Locking
- ☒ Recharge Voltage Continuous
- ☒ 3rd Key Fob button Enabled
- ☒ Key Fob Master Enabled
- ☒ 2nd Door Sensor Enabled
- ☒ Temperature Sensor Enabled

Firmware Version:
Serial Number:

Dashboard Lock/Unlock | Configure Power In-Lock | Program RF Keyfob | PIL Firmware/Passwords | Diagnostics

Lock Unlock Retrieve Data

☐ All ☐ Last 1 Record(s)
☐ Since Log Was Last Retrieved ☐ Last 1 Day(s)

Double Click Record For A Detailed Description

Event	Data High	Data Low	Date/Time
1	0	0	

75

FIG. 5 Data\Lock-Unlock screen – without ECU – PC communication

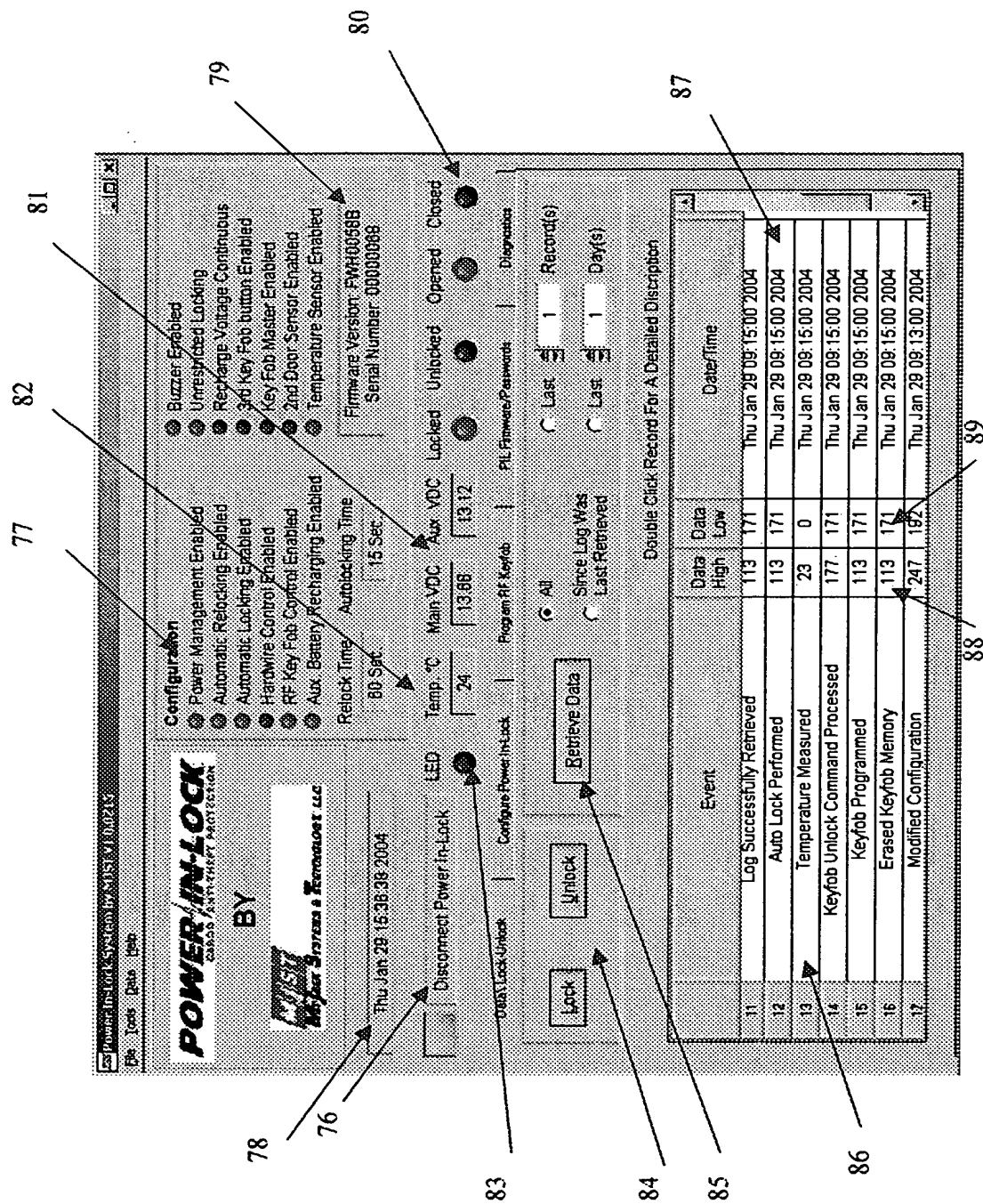


FIG. 6 Data/Lock-Unlock screen when ECU – PC communication is in progress

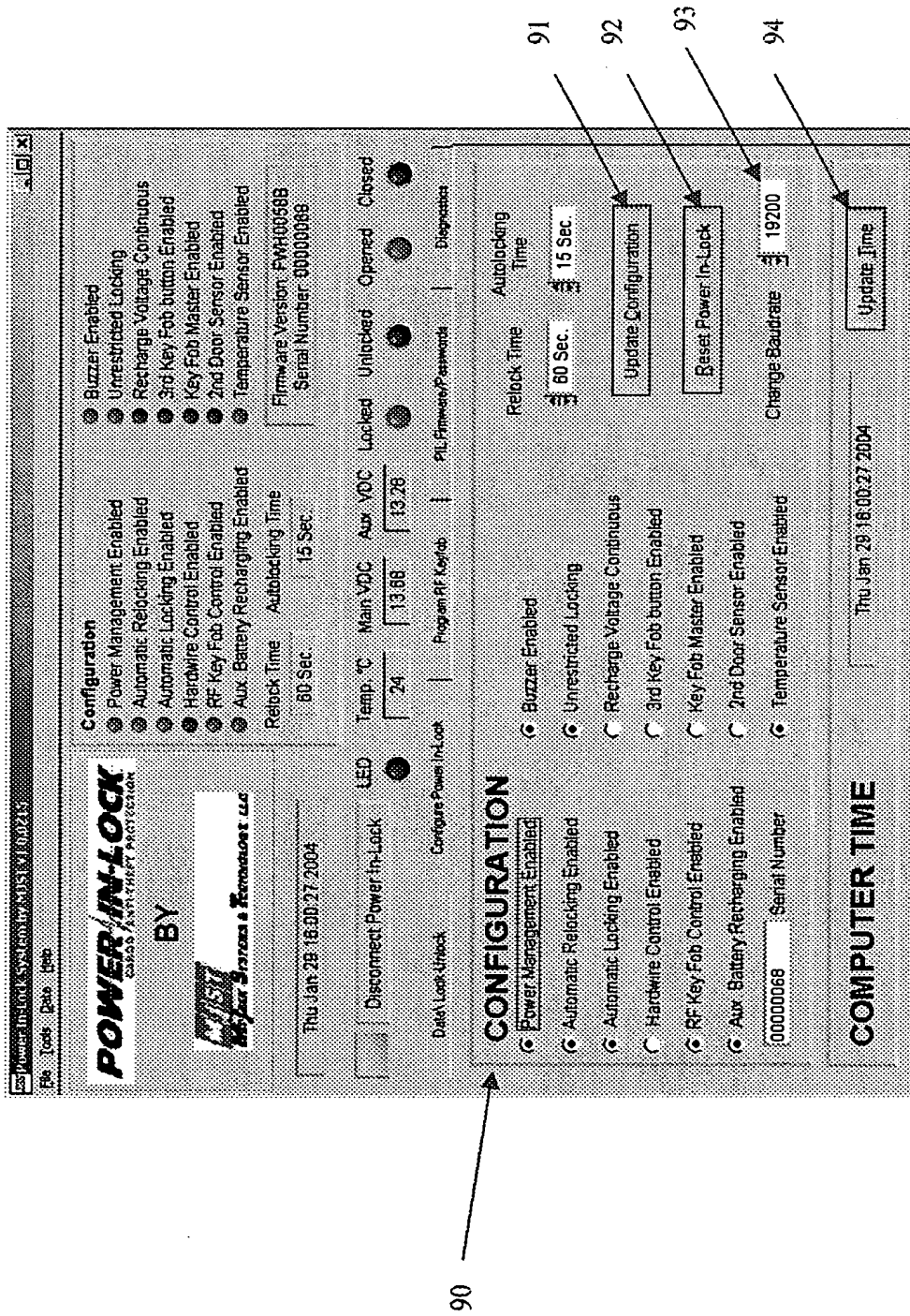


FIG. 7 Configure screen when ECU – PC communication is in progress

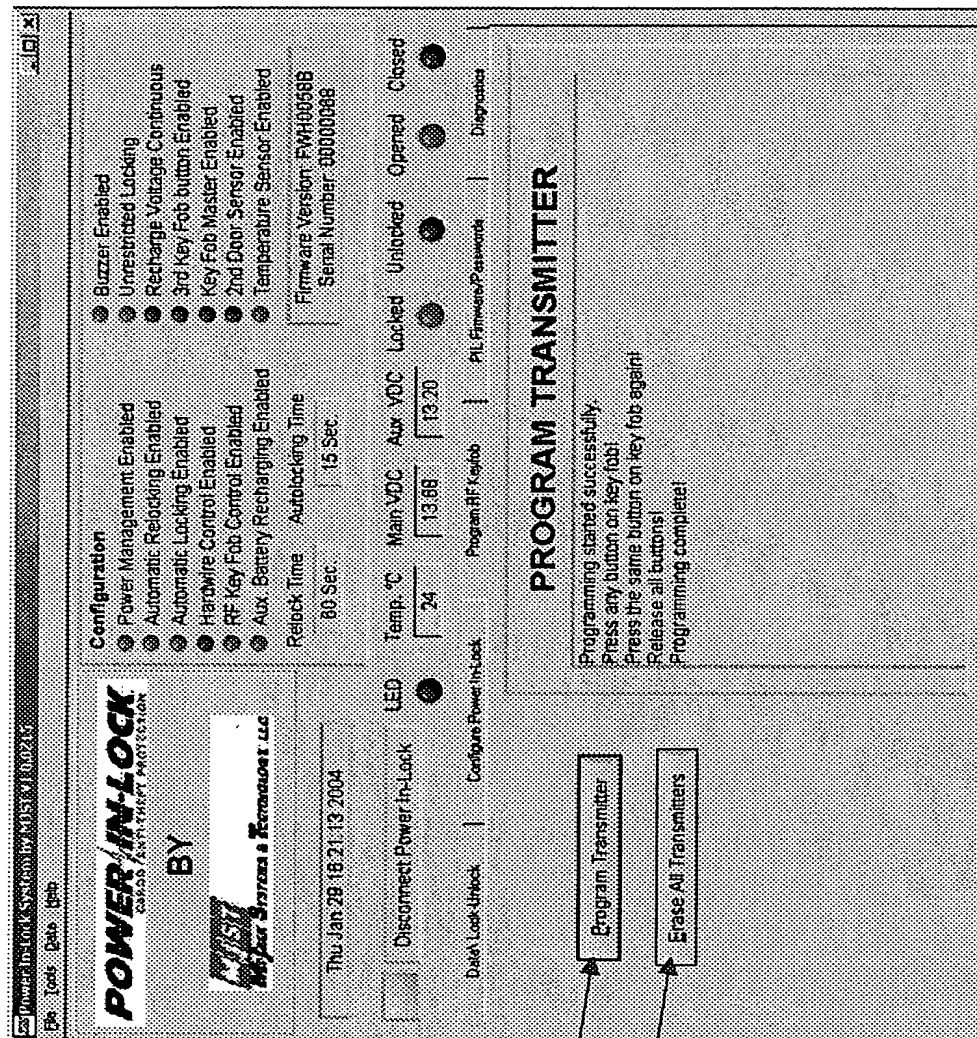


FIG. 8 Program RF key-fob screen when ECU – PC communication is in progress

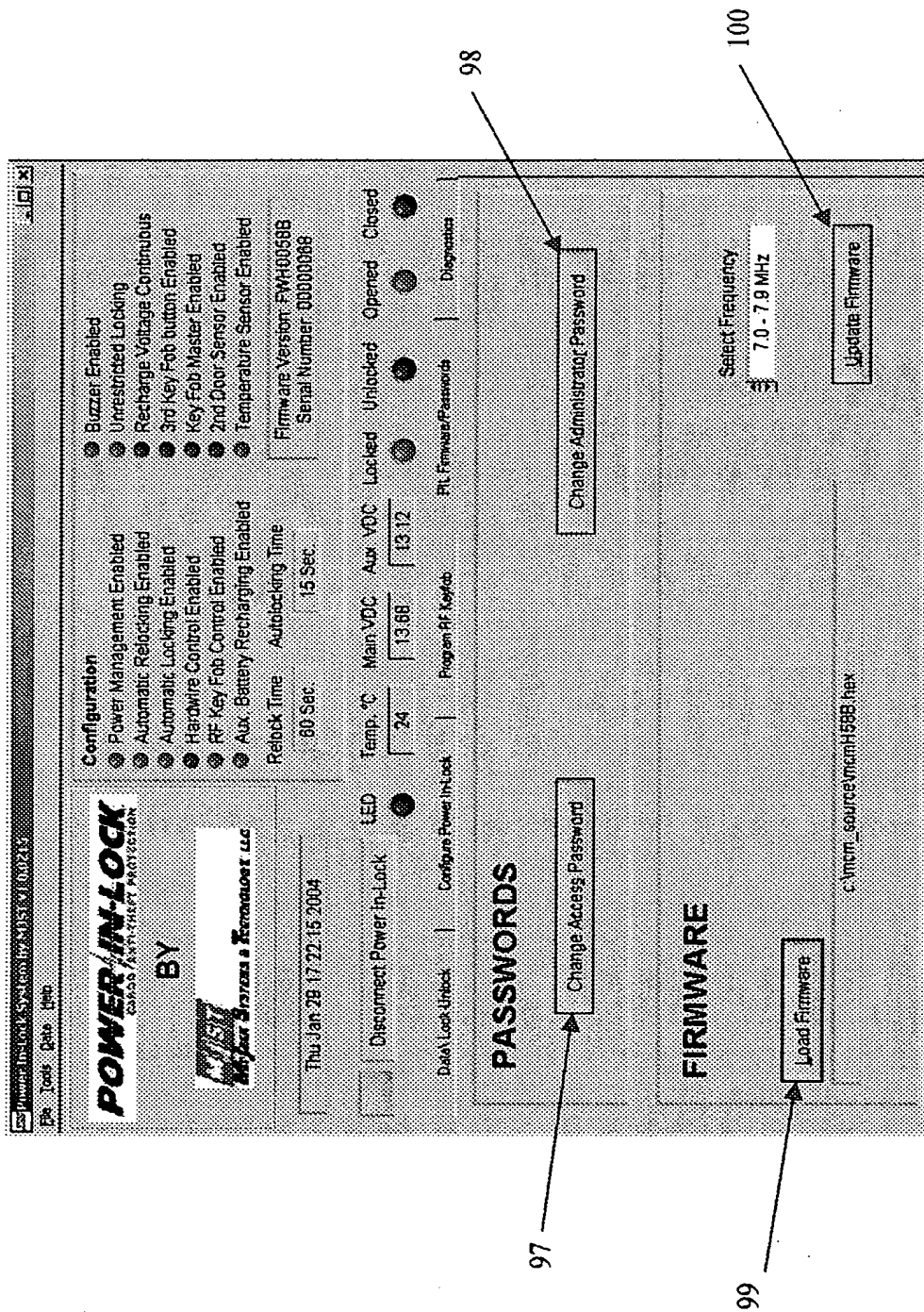


FIG. 9 Firmware/Passwords screen when ECU – PC communication is in progress

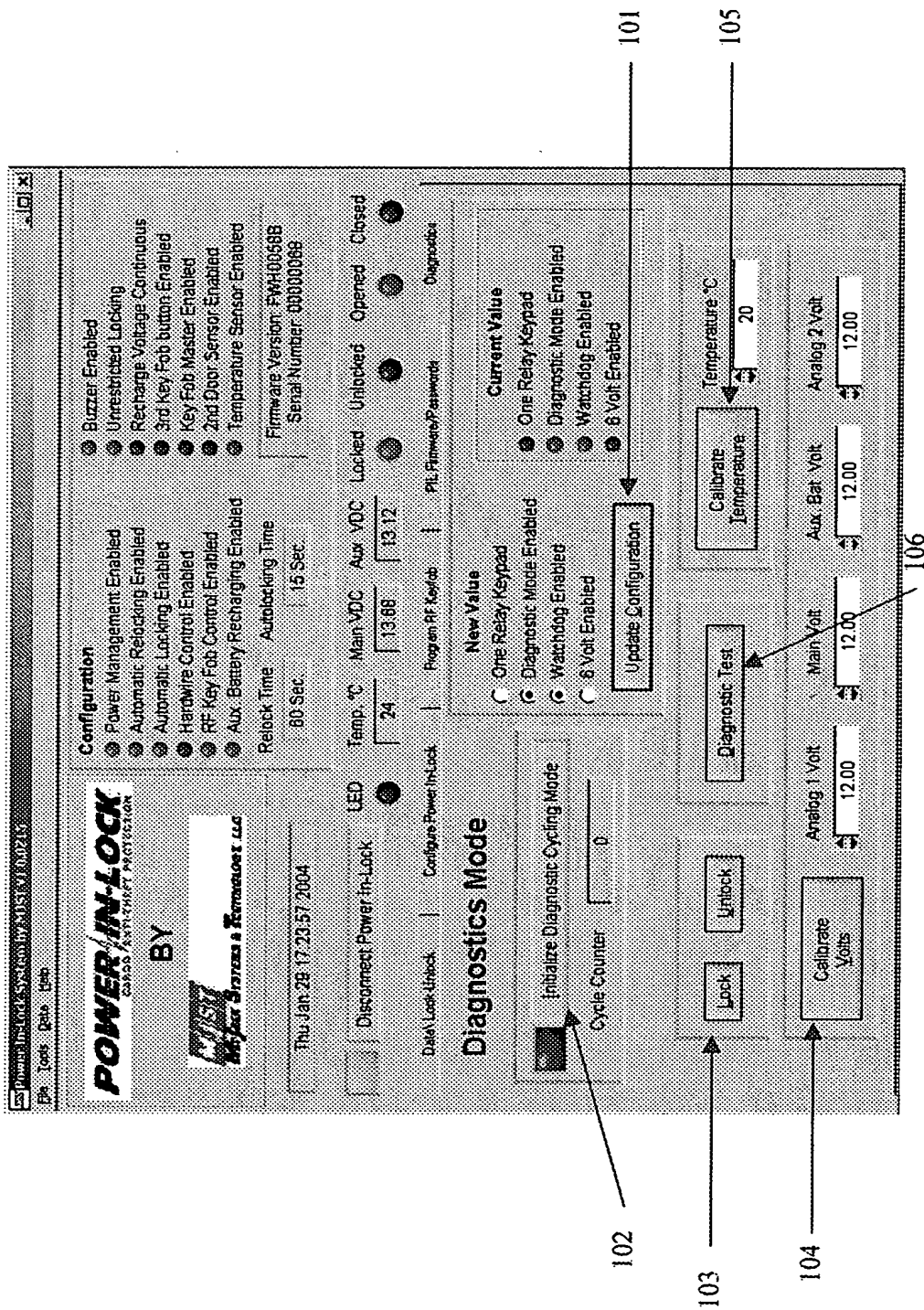


FIG.10 Diagnostics screen when ECU – PC communication is in progress

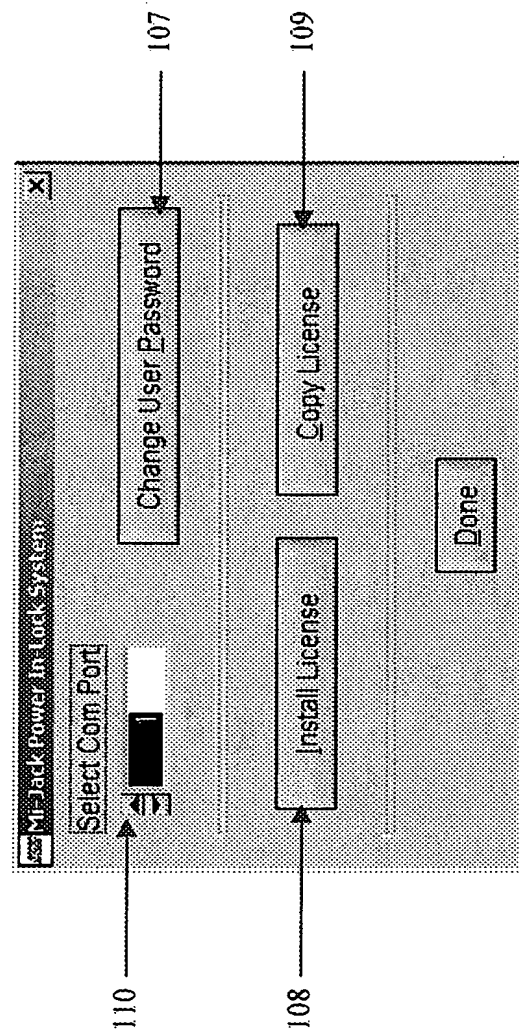
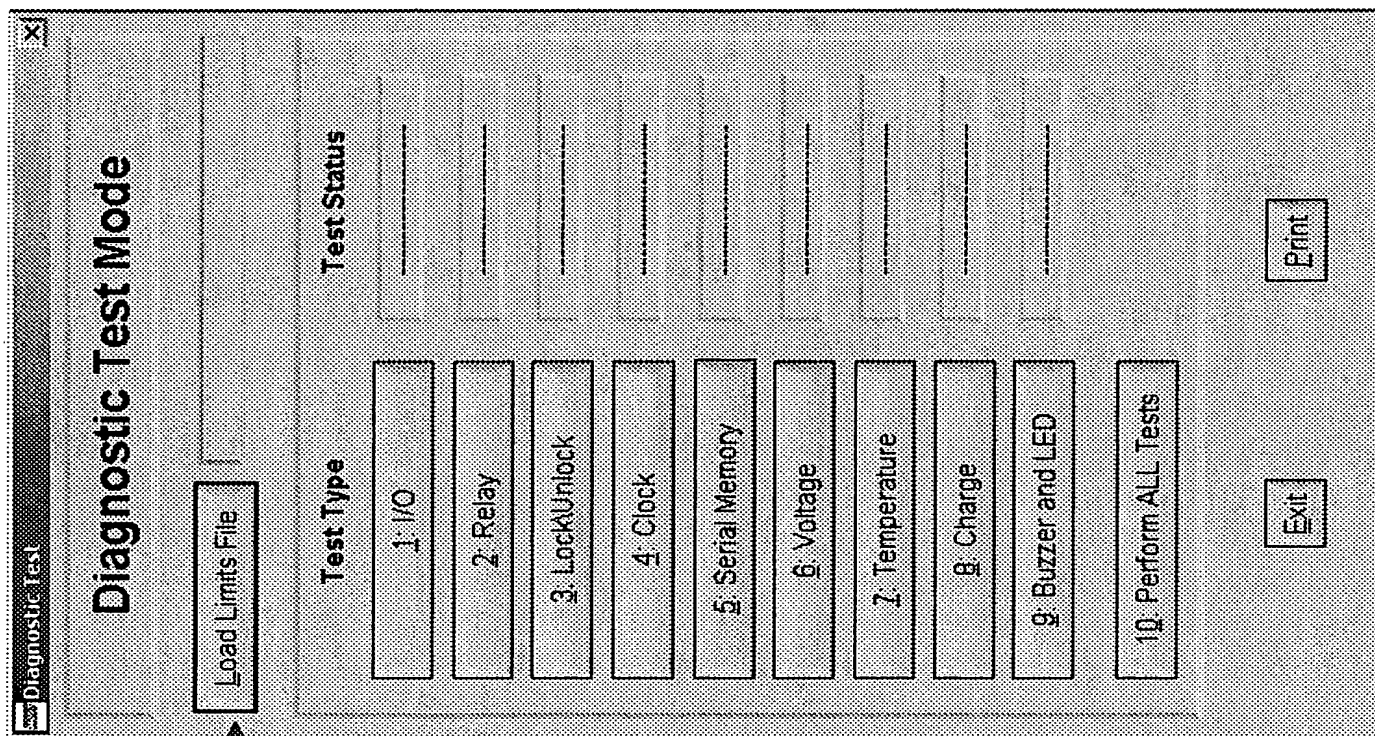


FIG.11 Typical setup screen



111

FIG.12
Diagnostic Test
screen

Main Routine

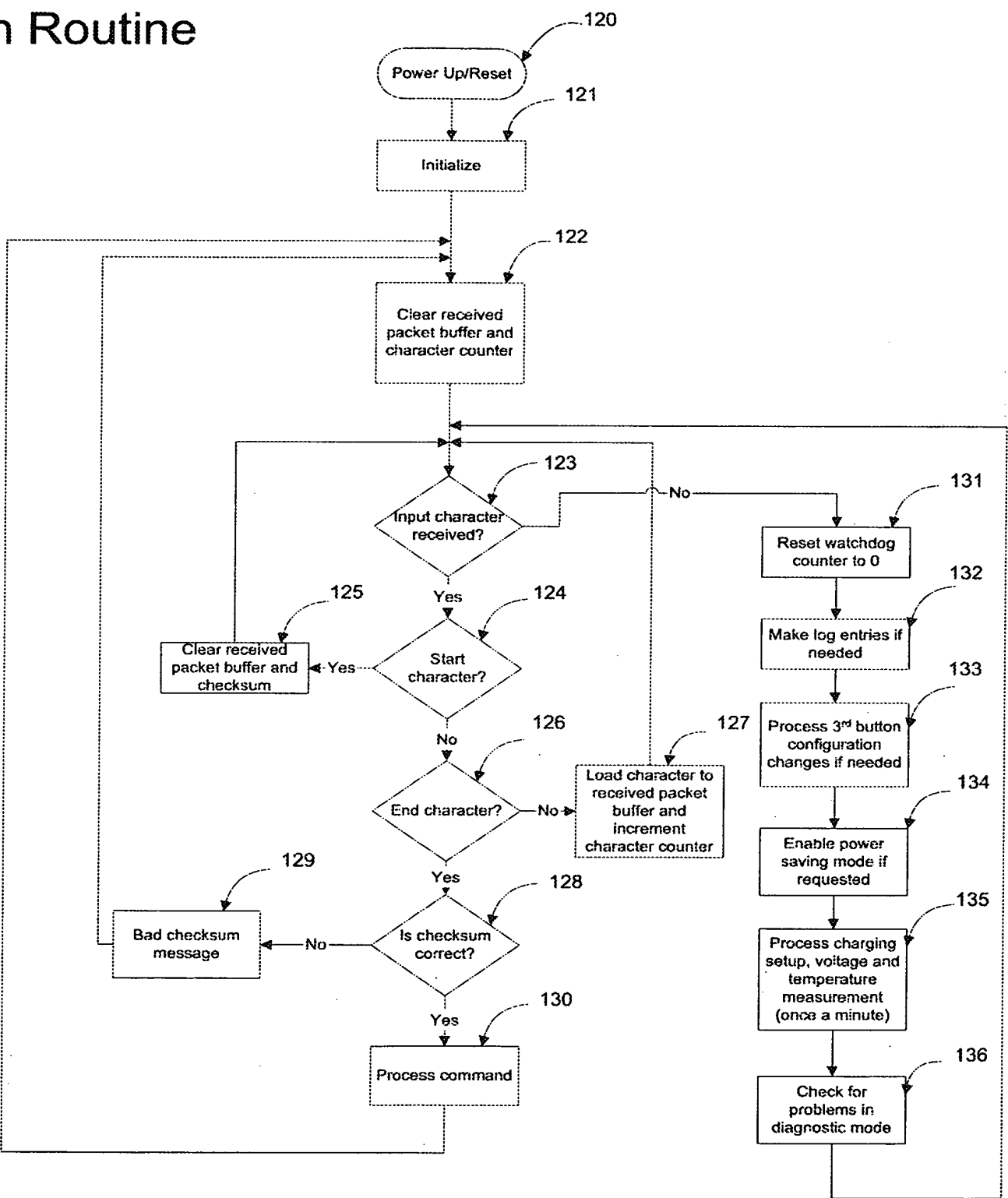


Fig. 13

Interrupt Routine

Executed every 40 msec

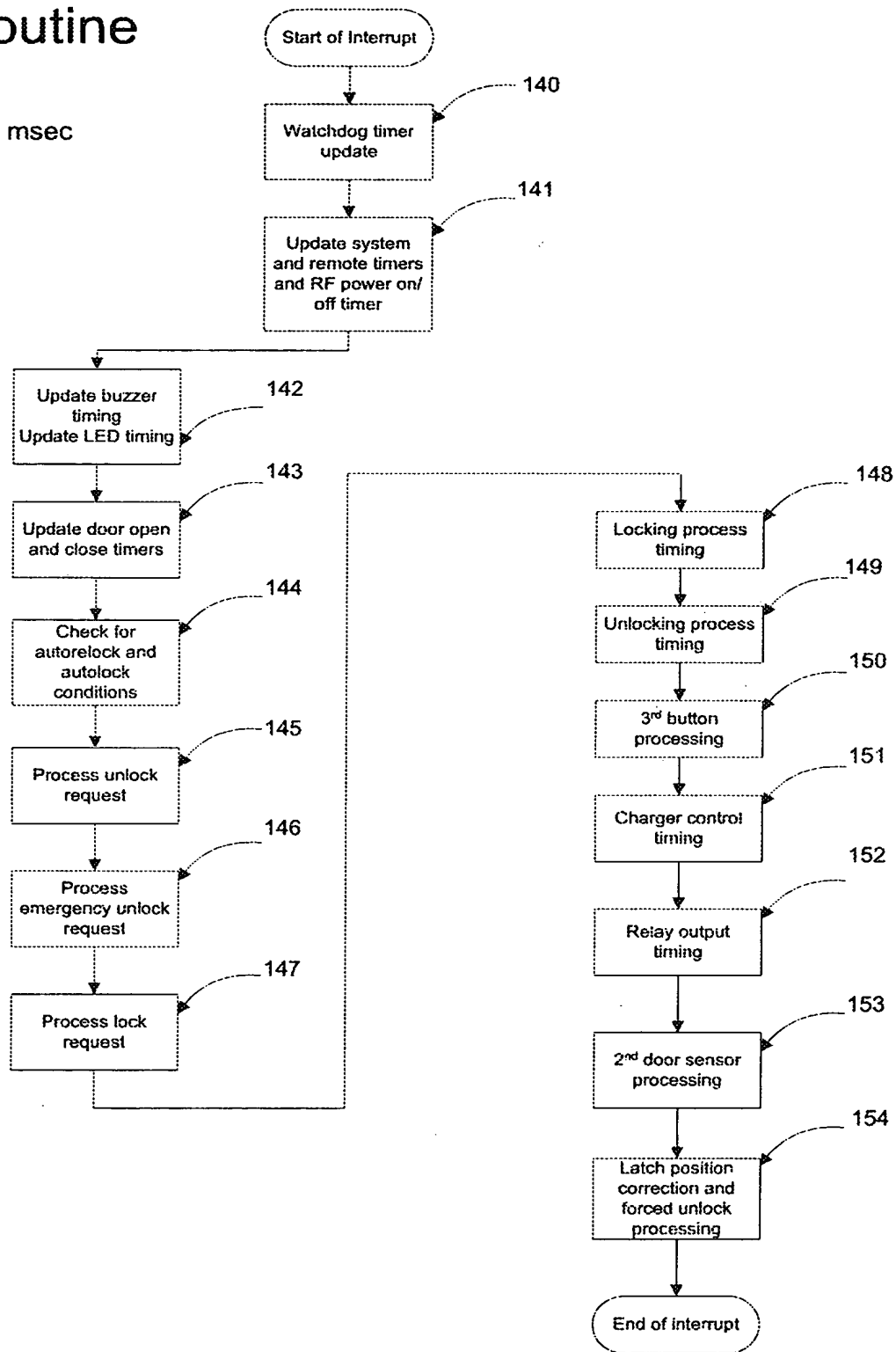


Fig. 14

Fig. 15
Corrupted header correction

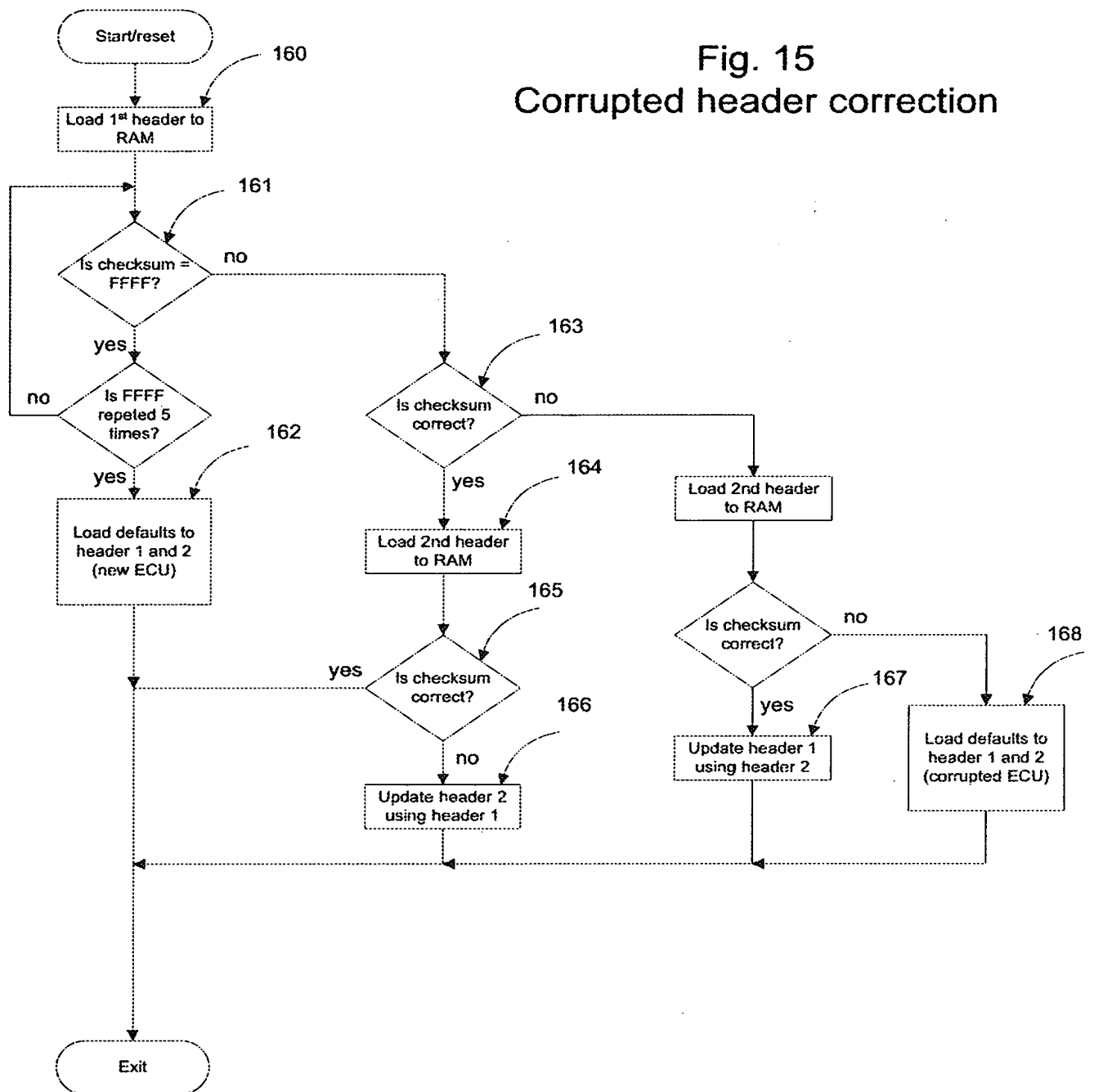
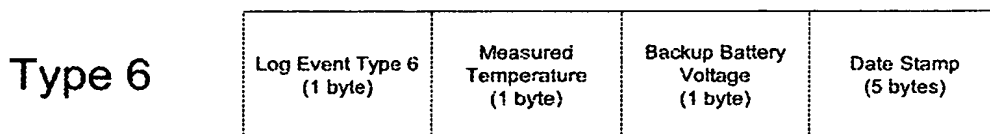
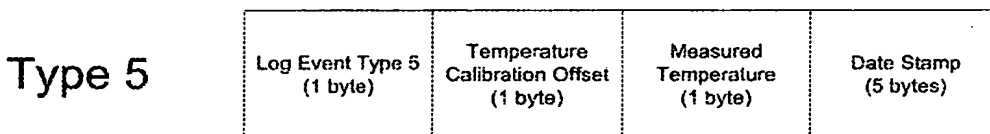
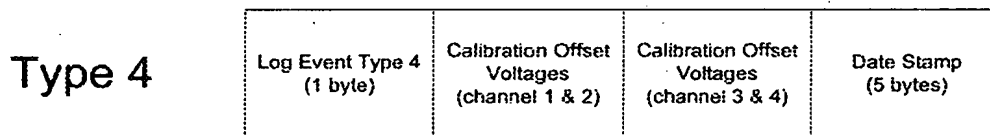
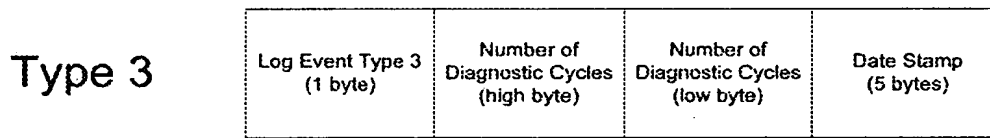
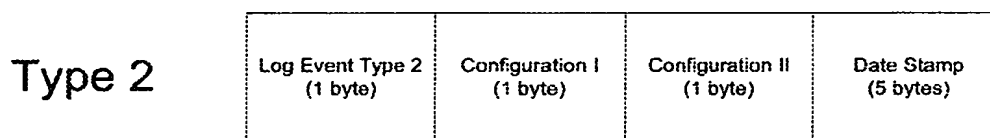
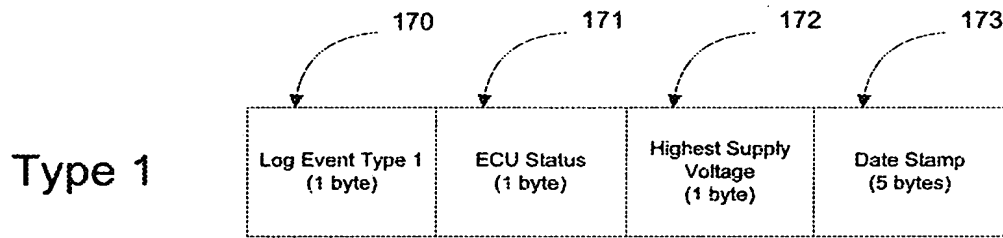


Fig. 16 Log Entries



**Fig. 17 Software Licensing
Password Locations**

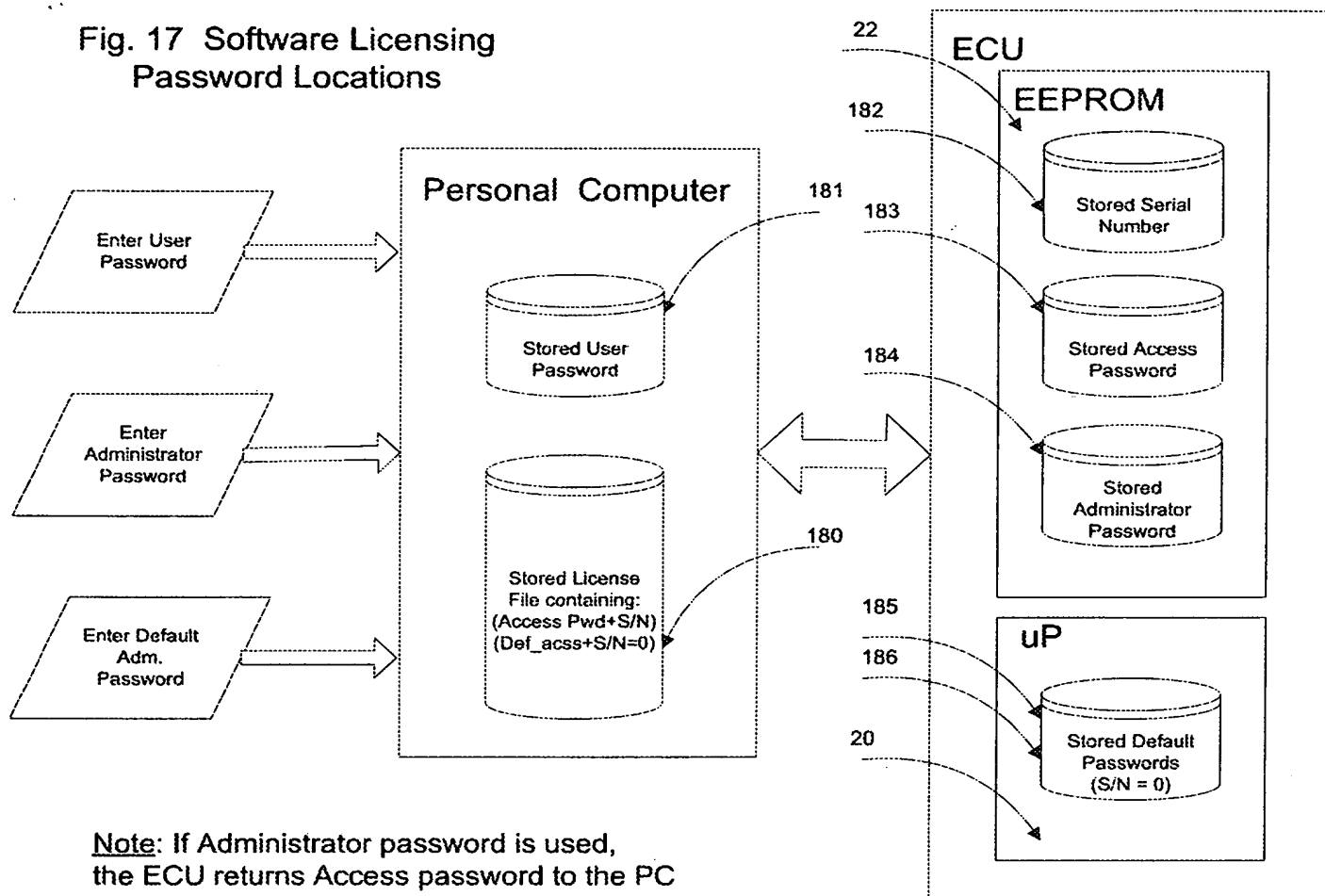
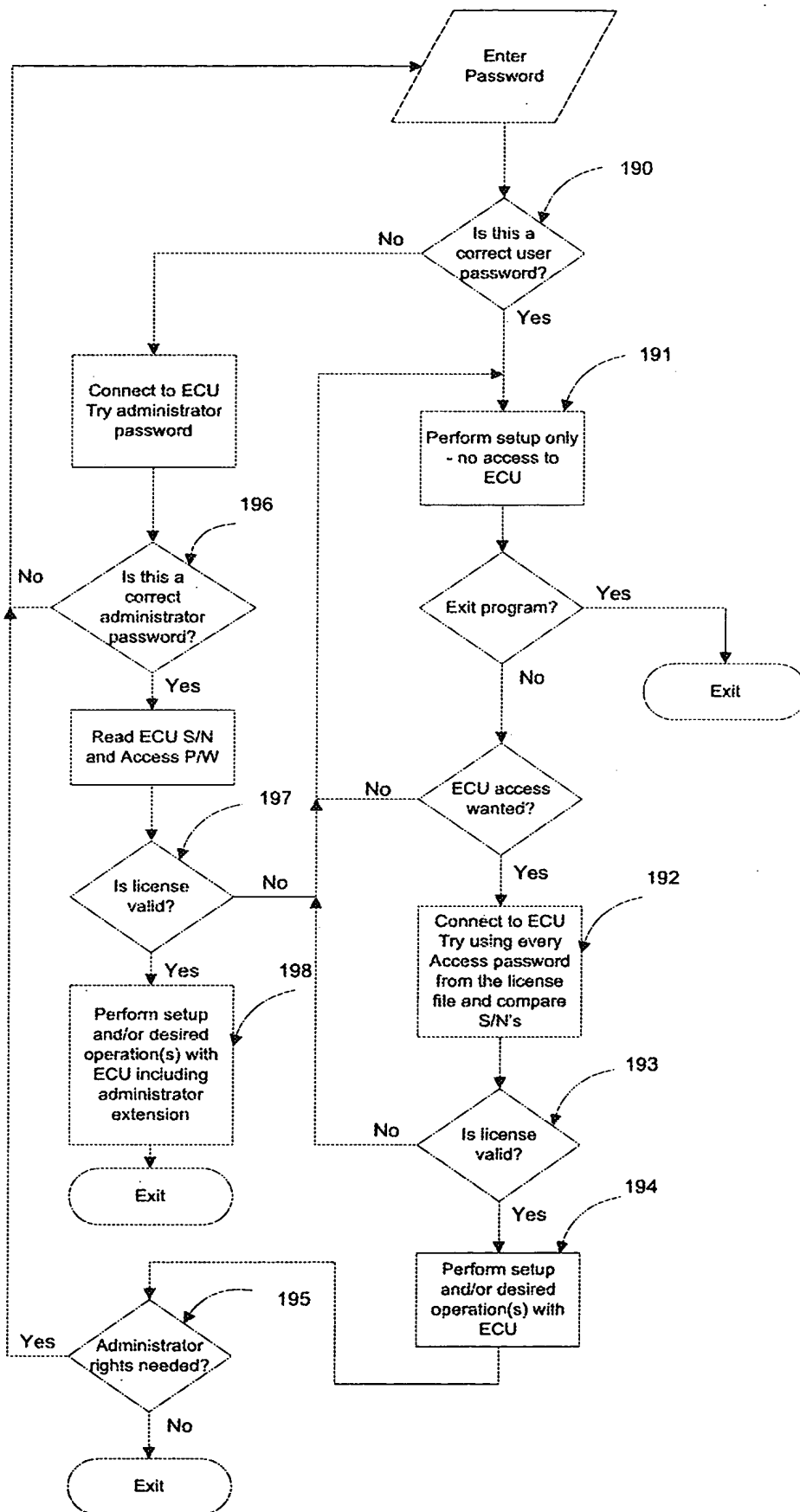


Fig. 18
Regular User
and
Administrator
Licensing
(no diagnostics)



PIL PASSWORDS w/o diagnostics

FUNCTION	USER PASSWORD w/o license	ADM. PASSWORD w/o license	USER PASSWORD w/ license	USER PASSWORD w/default license	ADM. PASSWORD w/ license	DEF. ADM. PASSWORD w/default license
Open PC program	X	X	X	X	X	X
Configure com port	X	X	X	X	X	X
Install license file	X	X	X	X	X	X
Change user password	X	X*	X	X	X*	X*
Check ECU serial number			X	X	X	X
Check ECU firmware version			X	X	X	X
Check system status			X	X	X	X
Read system voltages			X	X	X	X
Read temperature			X	X	X	X
Check/modify configuration			X	X**	X	X**
Check/modify real time clock			X	X	X	X
Send software reset			X	X	X	X
Change ECU baud rate			X	X	X	X
Erase RF transmitter memory			X	X	X	X
Program RF transmitter			X	X	X	X
Lock and unlock			X	X	X	X
Retrieve log events			X	X	X	X
Export log events to .txt file			X	X	X	X
Change Access pwd (ECU & lic. file)					X	X
Change Administrator password					X	X
Save updated license to disk					X	X
Update ECU firmware					X	X

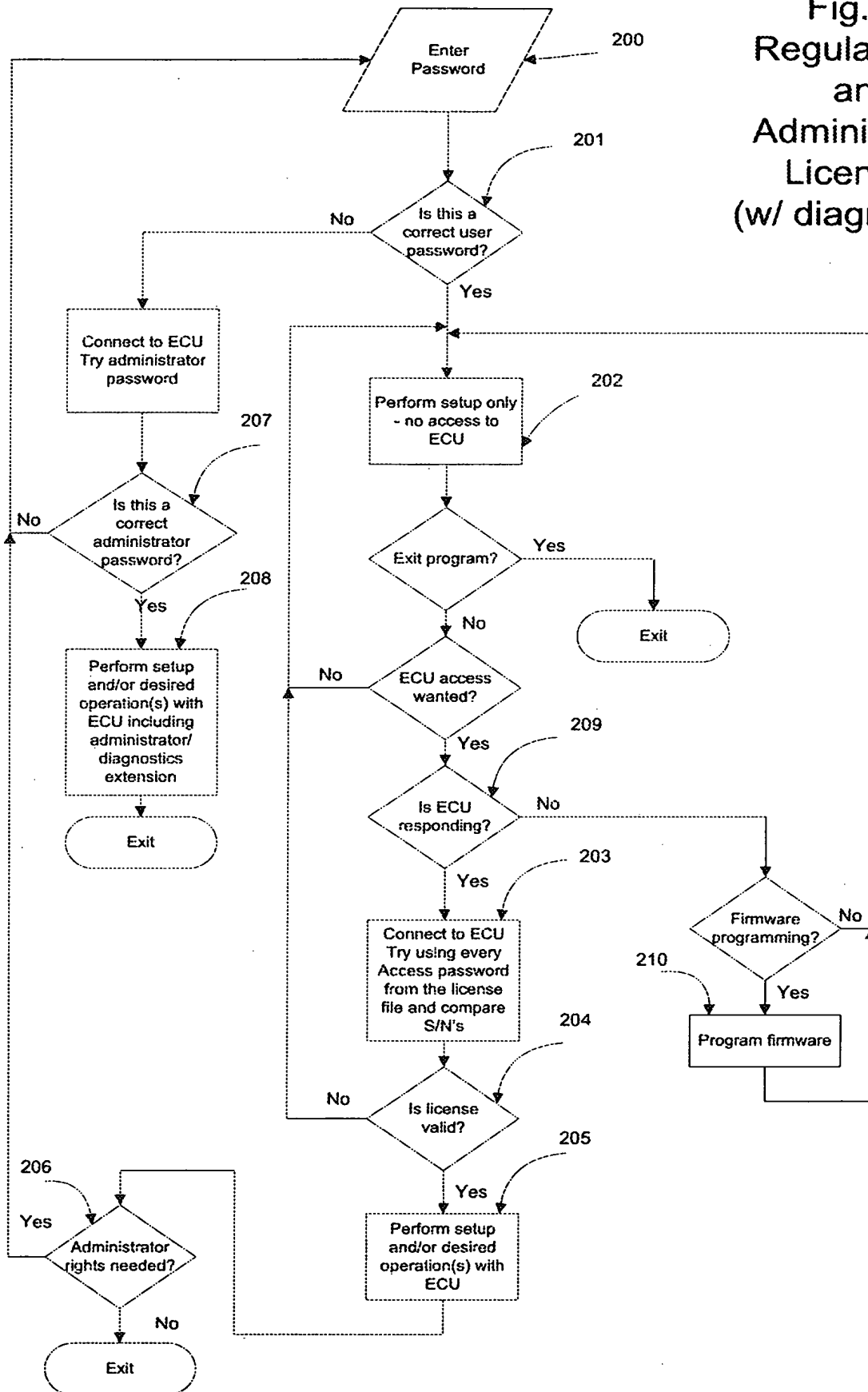
NOTE: default license is used when EEPROM memory is corrupted (default Access Password + S/N = 0)

X* - if user password is known

X** - read only

Fig. 19

Fig. 20
Regular User
and
Administrator
Licensing
(w/ diagnostics)



PIL PASSWORDS with diagnostics enabled

FUNCTION	USER PASSWORD w/o license	USER PASSWORD w/license	USER PASSWORD w/default license	ADM. PASSWORD confirmed	DEF. ADM. PASSWORD confirmed - EEPROM corrupted
Open PC program	X	X	X	X	X
Configure com port	X	X	X	X	X
Install license file	X	X	X	X	X
Change user password	X	X	X	X***	X***
Check ECU serial number		X		X	
Check ECU firmware version		X	X	X	X
Check system status		X	X	X	X
Read system voltages		X	X	X	X
Read temperature		X	X	X	X
Check/modify configuration		X	X	X	X
Check/modify real time clock		X	X****	X	X****
Send software reset		X	X	X	X
Change ECU baud rate		X	X	X	X
Erase RF transmitter memory		X	X	X	X
Program RF transmitter		X	X	X	X
Lock and unlock		X	X	X	X
Retrieve log events		X	X	X	
Export log events to .txt file		X		X	
Change Access pwd (ECU & lic. file)				X	
Change Administrator password				X	
Save updated license to disk				X	
Update ECU firmware	X*			X**	X**
Check/modify additional config. items				X	X****
Run diagnostic cycling				X	X
Perform diagnostic lock and unlock				X	X
Calibrate temperature and voltages				X	
Run diagnostic test				X	
Repair EEPROM				X	X

NOTE: default license is used when EEPROM memory is corrupted (default Access Password + S/N = 0)

- X* - if ECU is not programmed/not responding
- X** - if ECU is already programmed
- X*** - if user password is known
- X**** - read only

Fig. 21